

**TECHNICAL REVIEW DOCUMENT**  
**for**  
**MODIFICATION TO OPERATING PERMIT 95OPMR081**

Public Service Company - Roundup Compressor Station  
Morgan County  
Source ID 0870030

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Revised September 1999 and October 1999

**I. Purpose:**

This document establishes the decisions made regarding the reopening of the Operating Permit for Public Service Company - Roundup Compressor Station. This document provides information describing how the type of modification was determined (i.e. minor or significant), the modeling inputs and results as well as describing the changes made to the permit as required by the reopening and the changes made due to the Division's analysis. This document is designed for reference during review of the proposed permit by EPA and for future reference by the Division to aid in any additional permit modifications at this facility. The conclusions made in this report are based on the construction permit 97PO0846 (initial approval, dated April 16, 1998) and the preliminary analysis associated with this permit issuance, other requests made by EPA to modify language in permits (dated February 26, 1998 and August 27, 1998), a letter from the source dated March 19, 1999 indicating that the Responsible Official had changed and comments from the source on the draft permit and technical review document received October 6, 1999.

On April 16, 1998 the Colorado Air Quality Control Commission directed the Division to implement new procedures regarding the use of short term emission and production/throughput limits on Construction Permits. These procedures are being directly implemented in all operating permits that had not started their Public Comment period as of April 16, 1998. All short term emissions and production/throughput limits that appeared in Construction Permits associated with this facility that are not required by a specific State or Federal standard or by the above referenced Division procedures have been deleted and all annual emission and production/throughput limits converted to a rolling 12 month total. Note that, if applicable, appropriate modeling to demonstrate compliance with the National Ambient Air Quality Standards was conducted as part of the Construction Permit processing procedures. If required by this permit, portable monitoring results and/or EPA reference test method results will be multiplied by

8760 hours for comparison to annual emission limits unless there is a specific condition in the permit restricting hours of operation.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised Construction Permit.

This narrative is intended only as a adjunct to the reviewer and has no legal standing.

## **II. Description of Permit Modification Request/Modification Type**

The Operating Permit for the Roundup Compressor Station was initially issued on March 1, 1998. A construction permit (97PO0846) was issued on April 16, 1998 for a portable smart ash incinerator that would be used at both the Roundup and Leyden Stations. The smart ash incinerator was started up shortly after issuance of this construction permit. Since the conditions represent new applicable requirements for this facility, the Division is reopening the Roundup Operating permit. Reopenings are processed under the same procedures as the original permit issuance (i.e. 30 day public comment and 45 day EPA review periods apply). Uncontrolled emission increases due to the addition of the smart ash incinerator are below 2 tpy for all criteria pollutants. It should be noted that there are no de minimis levels for APEN reporting and permitting of incinerators.

In addition, this permit was reopened at the request of the EPA (letters dated February 26, 1998 and August 27, 1998) to change the language in some of the Operating Permits issued. These language changes address the status of previously issued construction permits and credible evidence language.

It should be noted that this facility may become subject to the requirements of 40 CR Part 63 Subpart HH (National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities) and/or Subpart HHH (National Emission Standards for Hazardous Air Pollutants from Natural Gas Transmission and Storage Facilities). The final rules for these standards were promulgated June 17, 1999. The first applicable requirement from these rules is the initial notification which is due June 17, 2000. Since this requirement falls within the last three years of the permit term, this requirement has not been included in the reopening.

### **III. Modeling**

The increase in emissions due to the permit modifications made through this reopening did not exceed threshold levels for modeling per the Division's Modeling Guidance therefore modeling was not required.

### **IV. Discussion of Modifications Made**

In addition to including the smart ash incinerator and the EPA required language changes, the Division used this opportunity to include changes to make the permit more consistent with recently issued permits as well as correct errors or omissions identified during inspections and/or discrepancies identified during review of this reopening and to reflect the change in the Responsible Official as indicated in a letter, dated March 19, 1999, from Public Service Co. The changes made to the permit are as follows:

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The Responsible Official and the title of the Permit Contact were changed as indicated by Public Service Co. The semi-annual monitoring periods and annual compliance periods were clarified, i.e. rather than March - August they are now indicated as March 1 - August 31.

#### **Section I - General Activities and Summary**

The language in Condition 1.1 was modified to indicate that a smart ash incinerator can be present at this facility. The language in Condition 1.3 was modified to more accurately address the status of previously issued construction permits. Condition 1.4, identification of state-only conditions, was modified to reflect the status of General Condition 17. The language regarding the alternative operating scenario (temporary engine replacement) was changed to EPA approved language. The phrase "or are major by itself" was added to the last sentence in Condition 3.1. The smart ash incinerator was added to the table in Condition 5.1.

In their comments on the draft permit, received October 6, 1999, the source indicated that the risk management plan for this facility has been submitted to the appropriate authorities. The source requested that Condition 4.2 (which requires submittal of the plan by June 20, 1999) be changed to reflect this. The Division opted to remove this requirement from the permit and Condition 4.3 was renumbered to Condition 4.2. In addition, the language in the annual certification report, II.B.1 (Appendix C) was changed to replace "June 20, 1999" with the required date.

## **Section II - Specific Permit Terms**

### **A. Engines (Section II.1 and 2)**

Short term emission and natural gas consumption limits were removed in accordance with the Division's short term emission limit policy (based on the April 16, 1998 Colorado AQCC directive). In addition, the requirement to calculate emissions by the 25<sup>th</sup> day of the month was modified to require that emissions be calculated by the end of the subsequent month. It should be noted that the requirement to record hours of operation remain in the permit since the hours of operation are used to allocate fuel use for the engines since not all of the engines have fuel meters. The language in these conditions (1.3 and 2.3) was changed to indicate that hours of operation are used to allocate fuel use. The phrase "in accordance with the provisions in Section I, Condition 1.3" was added after the construction permit citation in Conditions 1.1, 1.2, 2.1 and 2.2 to reflect that the construction permit was modified in conjunction with the operating permit, as allowed by Reg 3, Part C, Section III.B.7. Finally the language in Conditions 1.4 and 2.4 was changed to the following: "in the absence of credible evidence to the contrary, compliance with the 20% opacity requirement will be presumed whenever natural gas is used as fuel in this/[these] engine[s]."

In the source's comments on the draft permit, received October 6, 1999, the source indicated that it was incorrect to use the higher heating value of the natural gas in the emission calculations (Conditions 1.1 and 2.1). The language was changed to indicate that the lower heating value of the gas is used in the emission calculations.

### **B. Dehys (Section II.3 and II.4)**

For the reasons stated above both the short term emission and natural gas processing limits were removed. The permit was changed to require emission calculations by the "end of the subsequent month" rather than by "the 25<sup>th</sup> day of the month". In addition, for the reasons stated in the previous discussion of engine changes, the phrase "in accordance with the provisions in Section I, Condition 1.3" was added after the construction permit citation in Conditions 3.1, 3.4, 4.1 and 4.5. The requirement to record operating days remains in the permit since this number is used to estimate an average daily gas processing rate which is used in GLYCalc to estimate emissions. The language in these conditions (3.3 and 4.4) was changed to reflect that.

In their comments on the draft permit, received October 6, 1999, the

source indicated that the frequency of gas analyses required by the permit did not coincide well with the operation of the dehydrators and the gas plant (ethylene glycol dehydrator). The dehydrators and gas plant only operate when gas is withdrawn from storage, which is typically November through March. During initial withdrawal, when the hydrocarbon liquid content is low, the gas passes through the triethylene glycol dehydrators only. As the hydrocarbon liquid content increases, the gas first passes through the gas plant (ethylene glycol dehydrator) and then through the triethylene glycol dehydrators. Therefore the source requested that gas sampling be done after gas withdrawal begins (sample inlet of the dehydrators) and then when the gas plant goes on line (sample inlet and outlet of gas plant). The Division agrees with the sampling frequency the source has requested, however, in the event that the withdrawal period is extended for some period of time, additional sampling may be required. Therefore, the permit has been changed to require sampling as follows:

Triethylene glycol dehydrators:

Initial gas analyses: within one month of beginning of withdrawal

Subsequent analyses: semi-annually or when the gas plant comes on line, whichever is earlier

Gas plant (ethylene glycol dehydrator):

Initial analyses: inlet and outlet (dehys) within one month of startup of gas plant

Subsequent analyses: semi-annually

#### C. Smart Ash Incinerator (New Section II.6)

1. Description/Applicable Requirements - An initial approval construction permit (97PO0846) was issued for this incinerator on April 16, 1998. The incinerator was moved to final approval status based on the self-certification by the source submitted to the Division on July 30, 1998 that this unit was fully in compliance with each applicable requirement listed in their initial approval construction permit 97PO0846. Note that this unit is a portable unit to be used at both Roundup and Leyden Compressor Stations. Leyden Compressor Station is not a Title V permitted source and therefore a final approval construction permit will be issued for this unit. However, the appropriate applicable requirements from construction permit 97PO0846 have been included in the Operating Permit for Roundup Station and therefore, when this unit is located at Roundup Station, the incinerator is subject to the requirements identified in the Operating Permit. The applicable requirements from permit 97PO0846

have been included in the Operating Permit as follows:

- This unit is subject to the requirements in Colorado Regulation No. 6, Part B, Section VII - New Source Performance Standards for Incinerators as follows (condition 1):
  - Opacity of emissions shall not exceed 20%
  - Particulate matter emissions shall not exceed 0.10 grains per dry standard cubic feet corrected to 12% CO<sub>2</sub>
  - Summarized monthly records of daily burning rates and hours of operation and any particulate emission measurements shall be maintained and retained for at least two (2) years following the date of such records and summaries.
- Charging rate shall not exceed 50 lbs/hr or 10 tons/yr of dry mixture of waste such as paper, cardboard, oily absorbent material and oil contaminated filters. No other type of waste shall be burned in this unit without prior approval from the Division (condition 2).

Note that this condition was corrected, the “or” in the above condition was changed to an “and”. In addition, although the Division’s short term emission limit policy (based on the April 16, 1998 Colorado AQCC directive) would allow removal of short term processing limits, the short term charging rate limitation shall remain in the permit for the following reasons. First of all the hourly limit aids in meeting the requirement to not overload the combustion chamber (condition 5). Secondly, the Reg 6, Part B emission limitations (condition 1) are based on the charge rate of the incinerator. Finally, limiting the charge rate keeps this unit from being subject to the Federal NSPS requirements in 40 CFR Part 60 Subpart E (as adopted by Colorado Regulation No. 6, Part A).
- Absorbent materials that contain volatile liquids, such as gasoline or paint thinner shall not be burned in this unit. All materials to be incinerated must have a flash point higher than 100 ° F (condition 3).

The term flash point is generally used for liquids and this condition will be changed to reflect that no wastes contaminated by liquids with a flash point lower than 100° F shall be burned in the incinerator.
- The combustion chamber (55-gallon drum) shall not be overloaded with waste materials. It must have ample head room which encourages good start-up and efficient burning (condition 4).
- Liquid fuel shall not be used as start-up fuel. An ample layer of dry paper or cardboard material supplies a fast, easy initial fuel source for start-up (condition 5).
- Emissions of air pollutants shall not exceed the following limitations

(condition 6):

PM	0.13 lbs/hr	and	0.03 tons/yr
PM <sub>10</sub>	0.14 lbs/hr	and	0.03 tons/yr
SO <sub>2</sub>	0.06 lbs/hr	and	0.01 ton/yr
NO <sub>x</sub>	0.05 lbs/hr	and	0.01 tons/yr
VOC	0.38 lbs/hr	and	0.08 tons/yr
CO	0.50 lbs/hr	and	0.10 tons/yr

Note that in accordance with the Division's short term emission limit policy (based on the April 16, 1998 Colorado AQCC directive), the hourly emission limits will not be included in the permit.

- This unit shall be maintained and operated in accordance with manufacturer's operating instructions. The unit shall only be operated by trained personnel who are competent and knowledgeable of the unit's operating instructions and maintenance procedures (condition 7).
- NSPS good practices requirement, 40 CFR Part 60, Subpart A § 60.11(d), as adopted by reference in Colorado Regulation No. 6 Part B (condition 9).
- **State-only** odor requirements per Colorado Regulation No. 2 (condition 10).

This condition is included in the General Conditions of the Operating Permit. Based on engineering judgement, the Division does not believe that the incinerator is a significant source of odorous emissions, so this requirement will not be included as a specific condition for this unit and have specific periodic monitoring requirements. However, the source is still subject to the requirements of Regulation No. 2 as a **state-only** general condition.

- There shall be no radioactive and hazardous waste materials of any type burned in this unit (condition 11).
- Each time this equipment is moved to a new location within the State of Colorado the owner or operator shall file a Relocation Notice. Such notice shall be received by the Division at least ten (10) operator days prior to the change in location. The Relocation Notice shall include a facility emission inventory of all emission units at the site (Reg 3, Part A.II.C.1.f, Part B.IV.E and condition 13).

Note that in a review of the master file for this permit, the permit review indicated that the relocation notice would not have to be submitted if the unit was moved to either Roundup or Leyden stations, however, it would have to be submitted if the unit was moved to another facility within Colorado. The draft copy of the final approval permit reflects this. Since the operating permit reflects only Roundup station and since the construction permit

remains in effect for this unit at Leyden or other stations, the Division does not believe it is appropriate to include this requirement in the Operating Permit.

Although not specifically identified in the construction permit, this unit is subject to the following applicable requirements:

- Opacity of emissions shall not exceed 20%, during normal operations (Reg 1, Section II.A.1)
- Opacity of emissions shall not exceed 30%, for a period or periods aggregating more than six (6) consecutive minutes in any sixty (60) minute period, during fire building, cleaning of fire boxes, soot blowing, start-up, process modifications, or adjustment or occasional cleaning of control equipment (Reg 1, Section II.A.4). Note that this requirement was not included in the Operating Permit. Based on engineering judgement the Division believes that none of these special conditions apply to this unit. Fire building, soot blowing and cleaning of fire boxes is most aptly applied to units such as boilers and not this simple unit. This unit has no control equipment. This unit consists of placing a lid on a 55 gallon drum. The lid contains a blower unit that blows air around the top of the drum cyclonically which creates a virtual afterburner at the top of the drum. Operation of this unit consists of loading the drum with waste, lighting the waste, placing the lid on the drum and turning on the blowers. With this operation there is no real startup or a possibility for process modification.
- Particulate matter emissions shall not exceed 0.15 grains per standard cubic foot, dry corrected to 12% CO<sub>2</sub> (Reg 1, Section III.B.2.b).
- Prior to granting a final approval permit or amending a permit, when an emission source or control equipment is altered, or at any time when there is reason to believe that emission standards are being violated, the Division may require the owner or operator of an incinerator to conduct performance tests(s) in accordance with Appendix A of AQCC Reg 6 (Reg 1, Section III.B.4).
- Sources subject to this section are subject to the testing requirements and procedures of Part A, Subpart A and Part A, Subpart E § 60.54 of this Reg 6. The Division may waive all or part of the testing requirements, on a case by case basis where sufficient information is available to warrant such waiver (Reg 6 Part B, Section VII.E). Note that the above two conditions were not included in the permit. In July of 1994, a stack test was conducted by the company distributing these units. The stack test indicated that this unit could



comply with the particulate matter emission limits. Testing was done on paper, oil soaked sorbent materials, and oil filters.

Provided these units burn only these types of materials, there is no need for future performance tests. The Operating Permit limits this unit to the specific types of materials used in this performance test.

- NSPS General Provisions circumvention requirements (40 CFR Part 60 Subpart A § 60.12, as adopted by reference in Colorado Regulation No. 6, Part B).

#### Streamlining of Applicable Requirements

- Opacity Requirements - This unit is subject to a Reg 1 20% opacity requirement and a Reg 6, Part B, **state-only** opacity requirement. The Reg 1 20 % opacity requirement applies at all times, since the Division has previously indicated that the special conditions in the Reg 1 30% opacity requirements do not apply to this simple unit. Reg 6, Part B, Section I.A adopts the federal NSPS general provisions (40 CFR Part 60 Subpart A). The Reg 6, Part B **state-only** opacity requirement is not applicable during start-up, shutdown and malfunction in accordance with 40 CFR Part 60 Subpart A § 60.11(c). The Division has previously indicated that we do not believe that there are any startup, shutdown or malfunctions applicable to this simple unit, which would then make the Reg 6, Part B **state-only** standard applicable at all times. The Reg 6, Part B **state-only** opacity standard will be streamlined out of the permit since the Reg 1 opacity standard is as stringent.
- Particulate Matter Requirements - This unit is subject to a Reg 1 particulate matter requirement of 0.15 grains per dry standard cubic feet corrected to 15% CO<sub>2</sub> and a Reg 6, Part B **state-only** particulate matter requirement of 0.10 lb grains per dry standard cubic feet corrected to 15% CO<sub>2</sub>. The Reg 1 particulate matter standards apply all the time. Reg 6, Part B, Section I.A incorporates the federal NSPS general provisions (40 CFR Part 60 Subpart A). Based on EPA determinations, the Division has interpreted that 40 CFR Part 60 Subpart A § 60.11(d) as exempting sources from the emission standard during startup, shutdown and malfunction. Although the Division has previously indicated that we do not believe that there are any startup, shutdown or malfunctions applicable to this simple unit, which would then make the Reg 6, Part B **state-only** standard applicable at all times and therefore make the Reg 6, Part B requirement more stringent than the Reg 1 particulate standard the Division will not streamline out the Reg 1 standard. The Reg 1 standard is not being streamlined out of the

permit as the Division is unable to streamline out a state and federally enforceable requirement out of the Operating Permit in favor of a more stringent **state-only** requirement.

- **Miscellaneous Requirements** - The construction permit (97PO0849, condition 1) requires that records of the monthly burn rates and hours of operation be retained for a minimum of two years. For purposes of the Operating Permit (Reg 3, Part C) records shall be kept on site for one year and otherwise retained for 5 years. The Reg 3, Part C recordkeeping requirements are identified in general condition No. 21 of the Operating Permit. The requirement to keep records for two years will be streamlined out of the permit in favor of the more stringent 1 yr/5 yr requirement.

2. **Emission Factors** - The use of appropriate emission factors is necessary in order to monitor compliance with the emission limitations. The Division's preliminary analysis for the issuance of this construction permit indicated that the source would use emission factors from "FIRE Version 5.0, Source Classification Codes and Emission Factor Listing for Criteria Air Pollutants, EPA-454/R-95-012, dated August 1995, SCC 5-03-001-02. The emission factors are as follows:

<u>Pollutant</u>	<u>Emission Factor</u>
PM	5.3 lbs/ton burned
PM <sub>10</sub>	5.7 lbs/ton burned
SO <sub>2</sub>	2.5 lbs/ton burned
NO <sub>x</sub>	2.0 lbs/ton burned
VOC	15 lbs/ton burned
CO	20 lbs/ton burned

Note that the emission factors identified in Fire Version 5.0 and in the Division's preliminary analysis, indicate that PM<sub>10</sub> emissions are greater than PM. Since PM<sub>10</sub> is a subset of PM emissions, PM<sub>10</sub> emissions cannot be greater than PM emissions. Therefore, in the permit, the emission factor for PM and PM<sub>10</sub> will be 5.3 lbs/ton burned.

3. **Monitoring Plan** - Conditions 6.1 through 6.8 identify the compliance demonstration and monitoring requirements for these units. Periodic monitoring for this unit shall consist of recording for each charge the weight of the material, the type of material in the charge, including identifying any liquids which the combustibles may be contaminated, and the name of the personnel charging the incinerator. Daily totals of materials fed to the incinerator and hours of operation shall be

maintained. Emissions and quantity of materials fed to the incinerator shall be calculated monthly and included in rolling twelve month totals. Records of personnel trained in the maintenance and operational requirements for this unit shall be maintained and made available to the Division upon request. Compliance with the opacity requirement will be monitored by visible emission observations when the unit is running.

4. Compliance Status - Public Service Co submitted their self-certification that the smart ash incinerator was being operated in accordance with their permit requirements on July 20, 1998. The Division considers this source to be in compliance with all applicable requirements. Note that for this unit a final approval permit will be issued, since this unit is a portable unit that may be located at either Roundup or Leyden Compressor Stations. Leyden Station is not a Title V source and does not have a Title V Operating permit.

### **Section III - Permit Shield**

The title for Section 1 was changed from "Specific Conditions" to "Specific Non-Applicable Requirements" and a section 3 was added for subsumed (streamlined) conditions.

### **Section IV - General Conditions**

The language contained in the Common Provisions Regulation regarding upsets was included in General Condition 4. The language in General Condition 17 was changed to reflect the current status of this requirement. Condition 17 was previously only enforceable by state law, however, recent changes to Colorado Regulation No. 15 have made portions of the regulation federally enforceable and portions enforceable only by state law. A typographical error in General Condition 28 was corrected. The second paragraph referred to Regulation No. 7, Section III.C.3, while the reference should have been to Regulation No. 7, Section VIII.C.3.

### **Appendices**

Revised Appendices B and C were added to the permit. Note that emission unit tables in the appendices include the general conditions and the new smart ash incinerator.

An Appendix H was added. This appendix contains the most up-to-date KKK applicability report submitted by Public Service Company.